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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,678	07/14/2000	Per-Olof Brandt	040071-080	6987

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EXAMINER

DUONG, FRANK

ART UNIT	PAPER NUMBER
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2666

DATE MAILED: 12/02/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,678

Applicant(s)

BRANDT, PER-OLOF

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4-5. 6) ☐ Other:

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DETAILED ACTION

1. This Office Action is a response to the communication dated 07/14/2000. Claims 1-17 are pending in the application.

Information Disclosure Statement

2. The information disclosure statements filed 09/19/2000 and 04/11/2001 comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. They have been considered and placed in the application file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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3. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Atokawa (USP 6,308,051).

Regarding **claim 1**, in accordance with Atokawa reference entirety, Atokawa discloses a frequency multiplexer (antenna duplexer 1) for switching between frequency bands (*832-846 MHz and 860-870 MHz and 887-901 MHz and 915-925 MHz*) comprising:

a plurality of circuits (*C5-C1-C3-2 and C6-C2-C4-3 and C7-4*), connected to a common terminal (ANT), wherein each of the circuits comprises:

a filter (*C5-C1-D1 or C6-C2-3-D2 or C7-4*); and

a device (D1 or D2 or D3) connected (*C3 or C4 or C8*) to the filter (*C5-C1-D1 or C6-C2-3-D2*), wherein the device has first (on) and second (off) states;

each circuit has a first filter characteristic that passes a first frequency band and substantially blocks a second frequency band when the device is in the first state (*col. 6, lines 39-52*); and

each circuit has a second filter characteristic which substantially blocks the first frequency band and the second frequency band when the device is in the second state (*col. 6, lines 53-58*), wherein the second filter characteristic is a result of the device (D1 or D2) and the filter acting in combination (*col. 6, lines 30-58*).

Regarding **claim 2**, in addition to features recited in base claim 1 (*see rationales discussed above*), Atokawa further discloses a controller (CONT1 and CONT2) that selectively places each said device in the first state (on) or the second state (off), wherein when one of the plurality of circuits is conducting signals of the first frequency

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band (887-901 MHz) the controller (CONT1 and CONT2) places each remaining device of the plurality of circuits in the second state (*col. 7, lines 4-37*).

Regarding **claim 3**, in addition to features recited in base claim 2 (*see rationales discussed above*), Atokawa further discloses wherein the controller comprises a plurality of individual controllers (CONT1 and CONT2), each for controlling the device (D1, D2 or D3) of the corresponding one of the circuits (*see FIG. 1*).

Regarding **claim 4**, in addition to features recited in base claim 2 (*see rationales discussed above*), Atokawa further discloses wherein each said device comprises:

a switch device (D1, D2 or D3); and an element (C3, C4 or C8).

Regarding **claim 5**, in addition to features recited in base claim 4 (*see rationales discussed above*), Atokawa further discloses wherein the element is a capacity (C3, C4 or C8).

Regarding **claim 6**, in addition to features recited in base claim 4 (*see rationales discussed above*), Atokawa further discloses wherein said switch device is a diode (D1, D2 or D3).

Regarding **claim 7**, in addition to features recited in base claim 6 (*see rationales discussed above*), Atokawa further discloses wherein each diode is a PIN diode (*col. 4, line 51*).

Regarding **claim 8**, in addition to features recited in base claim 2 (*see rationales discussed above*), Atokawa further discloses wherein each of said second frequency band (915-925 MHz) of said plurality of circuits is a same frequency band (832-846 MHz and 860-870 MHz).

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Regarding **claim 9**, in addition to features recited in base claim 8 (*see rationales discussed above*), Atokawa further discloses an alternate circuit having a filter and a filter characteristic that passes each said second frequency band of said plurality of circuits and substantially blocks each of said first frequency band of said plurality of circuits (see col. 8, line 50 to col. 9, line 32).

Regarding **claim 10**, in addition to features recited in base claim 9 (*see rationales discussed above*), Atokawa further discloses wherein said controller places each said device into the first state (on) when the alternate circuit is conducting signals of the second frequency band (col. 8, lines 50-65).

Regarding **claim 11**, in addition to features recited in base claim 1 (*see rationales discussed above*), Atokawa further discloses wherein each filter comprises:

a first inductor (L2 or L3) connected in series with a filter capacitor (C3 or C4);
and

a second inductor (2 or 3) connected in parallel with both the first inductor (L2 or L3) and the filter capacitor (C3 or C4).

Regarding **claim 12**, in addition to features recited in base claim 11 (*see rationales discussed above*), Atokawa further discloses wherein each device comprises:

a first capacitor (C3 or C4) connected in series with a switch device (D1 or D2),
wherein the switch device (D1 or D2) and the first capacitor (C3 or C4) are connected in parallel with the first inductor (L2 or L3).

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Regarding **claim 13**, in addition to features recited in base claim 12 (see *rationales discussed above*), Atokawa further discloses wherein each switch device (D1 or D2) is a diode (see FIG. 1).

Regarding **claim 14**, in addition to features recited in base claim 13 (see *rationales discussed above*), Atokawa further discloses wherein each diode is a PIN diode (see col. 4, line 51).

Regarding **claim 15**, in addition to features recited in base claim 1 (see *rationales discussed above*), Atokawa further discloses wherein each of the first frequency bands is a high frequency band and each of the second frequency bands is a low frequency band (832-846 MHz and 860-870 MHz and 887-901 MHz and 915-925 MHz).

Regarding claim 16, in accordance with Atokawa reference entirety, Atokawa discloses a method for switching between frequency bands (832-846 MHz and 860-870 MHz and 887-901 MHz and 915-925 MHz) comprising the steps of:

selecting (CONT1 and CONT2) an active circuit from a plurality of circuits (25 and 26), wherein each circuit connected (90) to a common terminal (ANT),

each circuit has a first filter characteristic that passes a first frequency band and substantially blocks a second frequency band when a device (D1 or D2 or D3) is in the first state (col. 6, lines 39-52), and each circuit has a second filter characteristic which substantially blocks the first frequency band and the second frequency band when the device is in the second state (col. 6, lines 53-58), wherein the second filter characteristic

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is a result of the device (D1 or D2) and the filter acting in combination (*col. 6, lines 30-58*);

setting the device (D1 or D2 or D3) of the active circuit into the first state (on);
and

setting the devices (D1 and D2) of all non-selected circuits into a second state (off) (*col. 6, lines 53-58*).

Regarding **claim 17**, in addition to features recited in base claim 16 (see *rationales discussed above*), Atokawa further discloses the step of: conducting a signal through the active circuit, wherein the signal is of the first frequency band of the active circuit (*col. 6, lines 30-58*).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brandt (USP 6,332,071).

Bolin et al (USP 6,023,611).

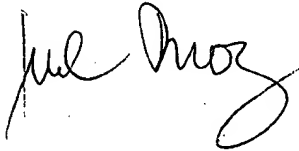
Pitta et al (5,652,599).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

A handwritten signature in black ink, appearing to read "Frank Duong", with a stylized, cursive script.

Frank Duong
November 25, 2003